

**ABSTRACT OF THE DISCLOSURE**

A technique is provided for improving the depth resolution of tomosynthesis images. The technique provides for the use of spiral scan trajectories. The X-ray source may moved along the spiral scan trajectory, acquiring projection data at various  
5 locations on the trajectory which are offset in the z-direction, i.e., in a direction perpendicular to the detector. Projection data acquired at different positions in the z-direction may be used to generate three-dimensional, tomosynthesis images having improved depth resolution.

10